Citation:

Eck LH, Klesges RC, et al. Children at familial risk for obesity: an examination of dietary intake, physical activity and weight status. *International Journal of Obesity* 1992: 16: 71-78.

PubMed ID: 1316329

Study Design:

Cohort Study

Class:

B - Click here for explanation of classification scheme.

Research Design and Implementation Rating:

NEUTRAL: See Research Design and Implementation Criteria Checklist below.

Research Purpose:

To study two groups of children, one with one or two overweight parents and one with no overweight parents.

These children were compared on relative weight, change in weight over a one-year period, physical activity, total energy intake, & dietary composition.

Inclusion Criteria:

- Families with child 3-4 years of age, having both natural parents available for participation & both parents being Caucasian.
- Relative weight (1977) was used to assess appropriateness of weight in children & adults

Exclusion Criteria:

not specified

Description of Study Protocol:

Families were brought into the laboratory for a variety of demographic, anthropometric, dietary intake & physical activity & psychosocial measures. Direct observation of children's physical activity occurred at the children's homes at a time convenient to the family but always following the evening meal. Children were observed for one-hour with the SCAN-CAT measure.

Data Collection Summary:

Dependent Variables

Relative weight (measured height & weight) & Weight change over a 1-year period (measured

height & weight).

Independent Variables

Dietary intake: Total energy intake, % of energy from CHO & fat (FFQ modified for use with children completed by parents and child); Levels of physical activity (Direction observation); Gender, Age

Control Variables

Statistical Analysis

Multivariate analysis of variance.

Description of Actual Data Sample:

Original Sample: 218 families were originally recruited.

Withdrawals/Drop-Outs: not specified.

Final Sample: 187 (92 high-risk & 95 low risk) remained in the study for year 2 and did not have a mother pregnant at year 1.

Location: Memphis, TN

Race/Ethnicity: Caucasian

SES: 46% of families recruited were from an upper-middle class background.

Age: 3-4 years of age at baseline.

Summary of Results:

Baseline

Weight of the two groups (high-risk – with one or two parents overweight & low-risk group) was similar at the start of the study.

Weight change over 1-year period

The high risk group had gained 5.5 lb during the year study while the low risk group had gained 4.9 lb (P=0.05).

Total Energy

Total energy intake between groups was similar.

Fat

% of energy obtained from fat was significantly higher in the high risk group (P=0.0004).

Carbohydrate

% of calories obtained from carbohydrates was significantly lower in the high risk group (P=0.0002).

Author Conclusion:

In conclusion, the present study found that the children with overweight parent(s) had dietary intakes that differed in composition, were in marginally different in total observed physical activity and sedentary activities, and gained more weight over the year studied.

Reviewer Comments:

Strengths

Assessed genetic predisposition by assessing children based on parental overweight.

Limitations

1 year study duration.

Research Design and Implementation Criteria Checklist: Primary Research

Relevance Questions		
1.	Would implementing the studied intervention or procedure (if found successful) result in improved outcomes for the patients/clients/population group? (Not Applicable for some epidemiological studies)	N/A
2.	Did the authors study an outcome (dependent variable) or topic that the patients/clients/population group would care about?	N/A
3.	Is the focus of the intervention or procedure (independent variable) or topic of study a common issue of concern to nutrition or dietetics practice?	N/A
4.	Is the intervention or procedure feasible? (NA for some epidemiological studies)	N/A

Validity Questions		
1.	**Was the research question clearly stated?**	Yes
1.1.	Was (were) the specific intervention(s) or procedure(s) [independent variable(s)] identified?	Yes
1.2.	Was (were) the outcome(s) [dependent variable(s)] clearly indicated?	Yes
1.3.	Were the target population and setting specified?	Yes
2.	**Was the selection of study subjects/patients free from bias?**	Yes
2.1.	Were inclusion/exclusion criteria specified (e.g., risk, point in disease progression, diagnostic or prognosis criteria), and with sufficient detail and without omitting criteria critical to the study?	N/A
2.2.	Were criteria applied equally to all study groups?	N/A

2.3.	Were health, demographics, and other characteristics of subjects described?	Yes
2.4.	Were the subjects/patients a representative sample of the relevant population?	Yes
3.	**Were study groups comparable?**	Yes
3.1.	Was the method of assigning subjects/patients to groups described and unbiased? (Method of randomization identified if RCT)	Yes
3.2.	Were distribution of disease status, prognostic factors, and other factors (e.g., demographics) similar across study groups at baseline?	N/A
3.3.	Were concurrent controls used? (Concurrent preferred over historical controls.)	N/A
3.4.	If cohort study or cross-sectional study, were groups comparable on important confounding factors and/or were preexisting differences accounted for by using appropriate adjustments in statistical analysis?	???
3.5.	If case control or cross-sectional study, were potential confounding factors comparable for cases and controls? (If case series or trial with subjects serving as own control, this criterion is not applicable. Criterion may not be applicable in some cross-sectional studies.)	N/A
3.6.	If diagnostic test, was there an independent blind comparison with an appropriate reference standard (e.g., "gold standard")?	N/A
4.	**Was method of handling withdrawals described?**	Yes
4.1.	Were follow-up methods described and the same for all groups?	Yes
4.2.	Was the number, characteristics of withdrawals (i.e., dropouts, lost to follow up, attrition rate) and/or response rate (cross-sectional studies) described for each group? (Follow up goal for a strong study is 80%.)	Yes
4.3.	Were all enrolled subjects/patients (in the original sample) accounted for?	Yes
4.4.	Were reasons for withdrawals similar across groups?	N/A
4.5.	If diagnostic test, was decision to perform reference test not dependent on results of test under study?	N/A
5.	**Was blinding used to prevent introduction of bias?**	N/A
5.1.	In intervention study, were subjects, clinicians/practitioners, and investigators blinded to treatment group, as appropriate?	N/A
5.2.	Were data collectors blinded for outcomes assessment? (If outcome is measured using an objective test, such as a lab value, this criterion is assumed to be met.)	N/A

5.3.	In cohort study or cross-sectional study, were measurements of outcomes and risk factors blinded?	N/A
5.4.	In case control study, was case definition explicit and case ascertainment not influenced by exposure status?	N/A
5.5.	In diagnostic study, were test results blinded to patient history and other test results?	N/A
6.	**Were intervention/therapeutic regimens/exposure factor or procedure and any comparison(s) described in detail? Were interveningfactors described?**	Yes
6.1.	In RCT or other intervention trial, were protocols described for all regimens studied?	N/A
6.2.	In observational study, were interventions, study settings, and clinicians/provider described?	N/A
6.3.	Was the intensity and duration of the intervention or exposure factor sufficient to produce a meaningful effect?	N/A
6.4.	Was the amount of exposure and, if relevant, subject/patient compliance measured?	Yes
6.5.	Were co-interventions (e.g., ancillary treatments, other therapies) described?	N/A
6.6.	Were extra or unplanned treatments described?	N/A
6.7.	Was the information for 6.4, 6.5, and 6.6 assessed the same way for all groups?	N/A
6.8.	In diagnostic study, were details of test administration and replication sufficient?	N/A
7.	**Were outcomes clearly defined and the measurements valid and reliable?**	Yes
7.1.	Were primary and secondary endpoints described and relevant to the question?	Yes
7.2.	Were nutrition measures appropriate to question and outcomes of concern?	Yes
7.3.	Was the period of follow-up long enough for important outcome(s) to occur?	Yes
7.4.	Were the observations and measurements based on standard, valid, and reliable data collection instruments/tests/procedures?	Yes
7.5.	Was the measurement of effect at an appropriate level of precision?	Yes
7.6.	Were other factors accounted for (measured) that could affect outcomes?	N/A
7.7.	Were the measurements conducted consistently across groups?	Yes
8.	**Was the statistical analysis appropriate for the study design and type of outcome indicators?**	Yes

8.1.	Were statistical analyses adequately described and the results reported appropriately?	N/A
8.2.	Were correct statistical tests used and assumptions of test not violated?	N/A
8.3.	Were statistics reported with levels of significance and/or confidence intervals?	N/A
8.4.	Was "intent to treat" analysis of outcomes done (and as appropriate, was there an analysis of outcomes for those maximally exposed or a dose-response analysis)?	N/A
8.5.	Were adequate adjustments made for effects of confounding factors that might have affected the outcomes (e.g., multivariate analyses)?	N/A
8.6.	Was clinical significance as well as statistical significance reported?	N/A
8.7.	If negative findings, was a power calculation reported to address type 2 error?	N/A
9.	**Are conclusions supported by results with biases and limitations taken into consideration?**	Yes
9.1.	Is there a discussion of findings?	Yes
9.2.	Are biases and study limitations identified and discussed?	N/A
10.	**Is bias due to study's funding or sponsorship unlikely?**	Yes
10.1.	Were sources of funding and investigators' affiliations described?	N/A
10.2.	Was the study free from apparent conflict of interest?	N/A